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Abstract

1375887 Tear-strips for opening packages SESAME INDUSTRIES Ltd 22 July 1972 34380/72 Heading B8C
A tear-strip structure 10 comprising an elongated strip 11 having an adhesive coating 12 on one side thereof, and a tear-tape 13 adhesively bonded to said one side of said strip 10 longitudinally thereof and substantially midway between the side edges thereof is characterized in that the tear tape comprises a plurality of longitudinally-extending filaments 16 bonded together, by a hot-melt adhesive 17, said hot-melt adhesive being heat-activatable at temperatures greater than 60 C. such that the tape may be bonded to said elongated strip through heat activation and subsequent cooling thereof. As shown, the tape 13 has a width which is about one third of the overall width of the strip 11, and comprises a number of elongated, fibrous threads 16 of man-made, or natural, fibres such as cotton, or polyester, respectively which are embedded in a synthetic material 17 such as polymerized vinyl chloride hot-melt adhesive. The tear-strip 11 comprises a strip of kraft paper having a water-sensitive layer 12. The latter may alternatively be one which is pressure- or heat- sensitive. A length of strip 10 may be cut to provide individual lengths with a pull tab 18 at one, and a complementary notch 19 at the other, end. In use, a strip 10 is applied, e.g. to bridge the closure flaps of a carton, the tape 13, which is not adhered to the carton, lying over the joint between the flaps. In an apparatus for making a strip a gummed strip (20) and a tape (22), supplied respectively from rolls (19, 21), are bonded together as they are fed, in superposed relationship, between a heated roll (24) and a co-operating pressure roll (25), and are cut into lengths by a cutter (26), Fig. 4 (not shown).

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PATENT SPECIFICATION

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(72) Inventor GLENN ELLIS



(54) TEAR STRIP STRUCTURE

(71) We, SESAME INDUSTRIES LIMITED, a corporation organized under the laws of Quebec, Canada, of 115 Brittany Avenue, Town of Mount Royal, Montreal Quebec, Canada, do hereby declare the invention for which we pray that a Patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

10 This invention relates to a tear strip structure.

Gummed tape is widely used in effecting closure of various types of packages, such as paper board and corrugated paperboard cartons and the like. Conventional tapes of this nature are usually formed of kraft paper having one side coated with a water-sensitive or a pressure sensitive adhesive.

15 In opening such packaged cartons, it is necessary to slit or tear the tape along the joint between the closure flaps of the carton so that the flaps can be engaged at the joint and swung open. Usually, a knife or like cutting instrument is used to slit the tape.

20 The present invention seeks to provide a tape slitting means incorporated in the structure of conventional gummed strips whereby such strip may be readily severed or slit along its medial longitudinal section.

25 According to the invention a tear strip structure comprising an elongated strip having an adhesive coating on one side thereof, and a tear tape adhesively bonded to said one side of said elongated strip, longitudinally thereof and substantially midway between the side edges thereof, characterized by said tear tape comprising a plurality of longitudinally extending filaments bonded together by a hot-melt adhesive, said hot-melt adhesive being heat activatable at temperatures greater than 30 60°C such that said tape may be bonded to said elongated strip through heat activation and subsequent cooling thereof.

35 The strip may be of paper, and the adhesive coating may be, for example, a water-sensitive, pressure sensitive or heat sensitive coating.

According to another aspect of the inven-

tion a method of forming a tear strip structure comprises drawing a length of an elongated strip having an adhesive coating on one side thereof from a supply roll, drawing a length of a tear tape of less width than said strip from a second supply roll and bonding said tape to said one side of said strip, characterized by said tape comprising a plurality of elongated filaments bonded together by a hot-melt adhesive and said bonding step comprising heating said tape to at least 60°C to activate said hot-melt adhesive and contacting said heat activated tape to said one side of said strip so that on subsequent cooling said tape is bonded to said strip.

The invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a tape structure in accordance with the invention;

Figure 2 is a section on line 2—2 of Figure 1;

Figure 3 is a cross-section of a tape suitable for use in the structure; and

Figure 4 is a diagrammatic elevation of a machine for forming the structure of the invention.

Referring to Figures 1 and 2, 10 is a gummed strip, which may be of conventional form such as a kraft paper strip 11 having a layer 12 of water-sensitive adhesive on one side thereof. It will be understood that this adhesive layer is stable at room temperature and requires to be moistened to render it adhesive.

It is also understood that with slight modifications a pressure-sensitive or a heat-sensitive adhesive could be used in place of the water-sensitive adhesive.

Superimposed on and adhesively bonded to the adhesive layer 12 is a bear tape 13. While the tape 13 may be of any suitable construction, it is preferably of greater tensile strength than that of the strip 10. It is positioned on the mid longitudinal section of the strip and extends substantially from end to end thereof. Its

width is but a minor portion of the overall width of the strip. In the embodiment shown, it is about one-third of the overall width. Moreover, it has a thickness which is preferably substantially less than that of the strip.

A suitable tear tape has been found to be that disclosed in Figure 3. This tape, as shown, comprises a plurality of elongated fibrous threads or strands or filaments 16, which may be of cotton, rayon, polyester, polyamide, or other synthetic man made or natural fibers, films, or strands. They are embedded in a synthetic resin material 17, which comprises a hot-melt adhesive composition, which can be rendered tacky by heating it to a temperature exceeding about 60°C.

It will be apparent, therefore, that if heat is applied to the tape in sufficient degree to soften the resin 17, the tape may then be applied to the gummed side of strip 10 so that on subsequent cooling the tape becomes firmly bonded to the strip.

In order to make the tear tape conveniently available for use in the finished article, it is proposed to sever any desired length in such manner that a pull tab 18 consisting of an end portion of the tape and underlying strip is formed. A cutter of the profile indicated may be employed although other suitable profiles may be employed. Thus, the other end portion of succeeding lengths of strip structure will have a complementary notch 9 formed therein, which will not affect the effectiveness of the structure to any noticeable degree.

In use, a suitable length of tape structure, as shown in Figure 1, is employed to unite the closure flaps of a carton or the like. Since the tape 13 is readily visible and may have substantial width, it is easy to apply in such manner that the tape bridges the joint between the closure flaps in the closed position thereof. Since the exposed surface of tape 13 is not adhesively joined to the carton, the tab 18 may be conveniently grasped when the carton is to be opened and the length of tape 13 pulled from the carton, thus freeing the closure flaps for swinging into open position.

Referring to Figure 4, a suitable arrangement is shown for producing the structure of the invention. A supply roll 19 of gummed strip 10 is provided for dispensing a portion thereof as indicated at 20. A supply roll 21 of tape 13 is provided for dispensing a portion thereof indicated at 22. Portion 22 is led over a guide roll 23 into engagement

within the periphery of a heated roll 24, to bring the resin in to a temperature exceeding about 60°C to render it tacky and adhesive. The new pressure sensitive tape is immediately applied to the gummed surface of the strip portion 20 under the influence of a pressure roll 25. Desired lengths of tape are severed by means of a cutting device 26.

It will be understood that a supply of the assembled strip 10 and tape 13 may be produced by simply omitting the cutter 26 which may later be employed to form desired lengths thereof.

WHAT WE CLAIM IS:—

1. A tear strip structure comprising an elongated strip having an adhesive coating on one side thereof, and a tear tape adhesively bonded to said one side of said elongated strip, longitudinally thereof and substantially midway between the side edges thereof, characterized by said tear tape comprising a plurality of longitudinally extending filaments bonded together by a hot-melt adhesive, said hot-melt adhesive being heat activatable at temperatures greater than 60°C such that said tape may be bonded to said elongated strip through heat activation and subsequent cooling thereof.

2. A tear strip structure as claimed in claim 1, in which the tape has a tensile strength greater than that of said strip.

3. A tear-strip structure as claimed in claim 1 or claim 2, in which the tape has a width not greater than one-third that of said strip.

4. A tear strip structure as claimed in any of the preceding claims, in which the tape has a thickness less than that of said coated strip.

5. A method of forming a tear strip structure comprising drawing a length of an elongated strip having an adhesive coating on one side thereof from a supply roll, drawing a length of a tear tape of less width than said strip from a second supply roll and bonding said tape to said one side of said strip, characterized by said tape comprising a plurality of elongated filaments bonded together by a hot-melt adhesive and said bonding step comprising heating said tape to at least 60°C to activate said hot-melt adhesive and contacting said heat activated tape to said one side of said strip so that on subsequent cooling said tape is bonded to said strip.

6. A tear strip structure substantially as

described with reference to and as illustrated in the accompanying drawings.

- 5 7. A method of forming a tear strip structure substantially as described with reference to and as illustrated in the accompanying drawings.

BARKER, BRETTELL & DUNCAN,
Chartered Patent Agents,
Agents for the Applicants,
138, Hagley Road,
Edgbaston,
Birmingham, B16 9PW.

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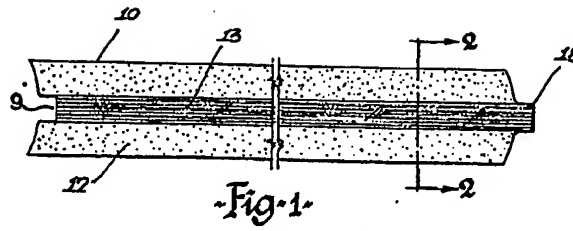


Fig. 1

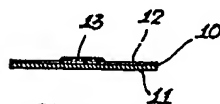


Fig. 2



Fig. 3

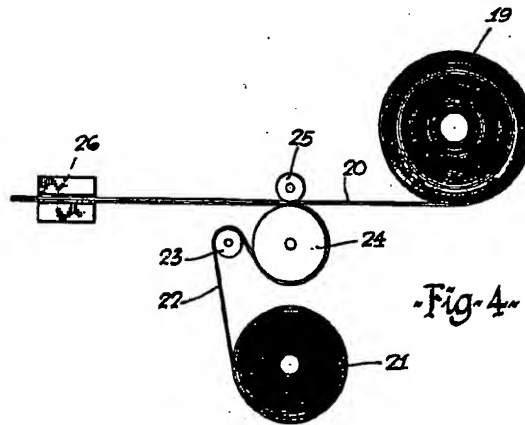


Fig. 4